CITY OF SOMERVILLE
CONTRIBUTORY RETIREMENT SYSTEM

Actuarial Valuation Report

January 1, 2004

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Report Summary:

Highlights	January 1, 2001	January 1, 2004
Contributions		
Funding Schedule FY 2005	$10,060,400	$10,409,170
Funding Schedule FY 2006	10,370,400	11,036,467
Funded Ratios		
GAS No. 25	65.7%	59.1%
Participants		
Actives	1,166	1,069
Inactives	235	320
Retirees and Beneficiaries	722	803
Disabilities	126	124
Total	2,249	2,316
Payroll		
Payroll of Active Members	$44,779,084	$43,875,838
Average Payroll	38,404	41,044
Normal Cost		
Employer	2,678,471	2,216,878
Employee	3,621,709	3,557,008
Administrative Expenses	275,000	300,000
Total	6,575,180	6,073,886
Actuarial Accrued Liabilities		
Actives	101,419,719	103,890,868
Retirees, Beneficiaries, Disabilities and Inactives	103,137,804	142,907,042
Total	204,557,523	246,797,910
Actuarial Value of Assets	134,378,449	145,850,905
Unfunded Actuarial Accrued Liabilities	$70,179,074	$100,947,005

Introduction

This report presents the City of Somerville actuarial valuation findings as of January 1, 2004, under the Commonwealth of Massachusetts Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2004.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the City of Somerville Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2004.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the year, the total unfunded actuarial accrued liability increased by 43.8%% to $100,947,005. The increase is the result of net unfavorable actuarial experience during the preceding year. The primary component of the unfavorable experience was an annual investment return less than the 8.25% assumption.

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Actuarial Costs and Liabilities:

Normal Costs

City of Somerville Contributory Retirement System
underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	January 1, 2001	January 1, 2004
Superannuation	$4,997,350	$3,887,999
Death	270,958	328,361
Disability	789,214	1,021,403
Terminations	242,658	536,123
Administrative Expenses	275,000	300,000
Total Normal Cost	6,575,180	6,073,886
% of Pay	14.7%	13.8%
Employee Contributions	3,621,709	3,557,008
% of Pay	8.1%	8.1%
Employer Normal Cost	$2,953,471	$2,516,878
% of Pay	6.6%	5.7%

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Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits earned by the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	January 1, 2001	January 1, 2004
Actives		
Superannuations	$92,737,581	$96,002,128
Death	2,811,521	$3,105,415
Disability	6,381,146	$6,360,715
Terminations	(510,529)	($1,577,390)
Retirees and Inactives		
Retirees	73,911,783	112,678,833
Disabled Retirees	27,405,975	27,596,107
Inactives	1,820,046	2,632,102
Total	$204,557,523	$246,797,910

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Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactives as well as all benefits earned and expected to be earned in the coming years by the actives. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	January 1, 2001	January 1, 2004
Actives		
Superannuation	$148,374,695	$131,128,755
Death	5,848,423	6,073,743
Disability	15,282,286	14,925,286
Terminations	2,441,007	3,577,690
Retirees and Inactives		
Retirees	73,911,783	112,678,833
Disabled Retirees	27,405,975	27,596,107
Inactives	1,820,046	2,632,102
Total	$275,084,215	$298,612,516

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Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	January 1, 2001	January 1, 2004
Cash equivalents	10,775,603	$22,121,971
Short term investments	6,328,278	0
Fixed income securities	22,781,542	34,201,555
Equities	57,015,011	61,185,228
International	6,426,869	5,791,734
Real Estate	8,407,276	13,484,309
Venture Capital	0	0
Other	18,232,523	561,794
Accounts receivable	4,325,499	310,979
Accounts payable	0	(269,350)
Accrued income	85,849	101,008
Total Market Value	$134,378,449	$137,489,228
Total Actuarial Value	$134,378,449	$145,850,905

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Actuarial Value of Assets

The actuarial value of assets is determined by projecting the actuarial value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8.25%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 20%. The calculation of the actuarial value of assets as of January 1, 2004 is presented in Table V.

Table V

		January 1, 2004
(1)	Market value at January 1, 2003	$121,694,185
(2)	2003 Contributions	$13,938,834
(3)	2003 Benefit Payments	($17,738,138)
(4)	Net interest adjustment at 8.25% on (1), (2), and (3) to December 31, 2003	$9,883,049
(5)	Expected market value on January 1, 2004 (1) + (2) + (3) + (4)	$127,777,930
(6)	Actual market value on January 1, 2004	$137,489,228
(7)	2003 (Gain) / Loss	($9,711,298)
(8)	80% of 2003 (Gain) / Loss	($7,769,038)
(9)	2002 (Gain) / Loss	$15,951,667
(10)	60% of 2002 (Gain) / Loss	$9,571,000
(11)	2001 (Gain) / Loss	$15,745,226
(12)	40% of 2001 (Gain) / Loss	$6,298,091
(13)	2000 (Gain) / Loss	$1,308,124
(14)	20% of 2000 (Gain) / Loss	$261,625
(15)	Actuarial value on January 1, 2004, (6) + (8) + (10) + (12) + (14)	$145,850,905
(16)	but not less than 80% nor greater than 120% of (6)	$145,850,905
	Ratio of actuarial value to market value	106.08%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	January 1, 2001	January 1, 2004
Actuarial Accrued Liability	$204,557,523	$246,797,910
Actuarial Assets	134,378,449	145,850,905
Unfunded Actuarial Accrued Liability	$70,179,074	$100,947,005
Funded Status	65.7%	59.1%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the prior active unfunded actuarial accrued liability by June 30, 2025
  $ 68,951,582 over 21 years with 4.0 % increasing payments
- Increasing amortization of the (gains)/losses by June 30, 2019
  $ 23,367,972 over 15 years with 4.0 % increasing payments
- Level amortization of the Early Retirement Incentive unfunded liability for 1992 June 30, 2005
  $ 96,559 over 1 year
- Level amortization of the 2002 Early Retirement Incentive unfunded liability by June 30, 2019
  $ 5,476,744 over 15 years
- Level amortization of the 2003 Early Retirement Incentive unfunded liability by June 30, 2020
  $ 1,911,740 over 15 years starting in FYE06
- Interest adjustment for payments deposited at the beginning of the fiscal year.

The pension appropriation is shown in Table VII.

Table VII

	January 1, 2001	January 1, 2004
Normal cost	$2,953,471	$2,516,878
Amortization payment of the prior accrued liability	4,756,853	4,759,622
Amortization payment of the (gains)/losses	181,723	2,031,462
Amortization of the 1992 ERI Liability	28,029	96,559
Amortization payment of 2002 ERI liability	600,135	600,135
Total cost	$8,520,211	$10,004,656
% of Pay	19.0%	22.8%
Amortization payment of 2003 ERI liability		$362,280
Fiscal 2005 cost	$10,060,400	$10,409,170
Fiscal 2006 cost	$10,370,400	$11,036,467
Fiscal 2007 cost	$10,690,400	$11,399,440

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 15 years until the unfunded liabilities attributed to gains and losses are paid off. After the drop in the 16th year the cost will increase over the next 6 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 23.7% of payroll, decreasing to 14.1% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of about 3.6% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

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Appropriation Forecast
(amounts in thousands)

Fiscal Year Ending	Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2005	$43,876	$3,557	$2,619	$7,791	$10,409	23.7	59.1
2006	45,850	3,765	2,687	8,350	11,036	24.1	60.5
2007	47,914	3,984	2,756	8,644	11,399	23.8	62.2
2008	50,070	4,215	2,826	8,949	11,775	23.5	63.8
2009	52,323	4,460	2,896	9,267	12,163	23.2	65.6
2010	54,677	4,717	2,967	9,598	12,565	23.0	67.4
2011	57,138	4,989	3,039	9,942	12,981	22.7	69.2
2012	59,709	5,275	3,111	10,299	13,410	22.5	71.2
2013	62,396	5,578	3,184	10,671	13,855	22.2	73.2
2014	65,204	5,897	3,256	11,058	14,314	22.0	75.3
2015	68,138	6,233	3,329	11,460	14,789	21.7	77.5
2016	71,204	6,587	3,402	11,879	15,280	21.5	79.7
2017	74,408	6,961	3,474	12,314	15,788	21.2	82.0
2018	77,757	7,355	3,547	12,766	16,313	21.0	84.4
2019	81,256	7,771	3,618	13,237	16,855	20.7	86.9
2020	84,912	8,209	3,689	9,295	12,984	15.3	89.5
2021	88,733	8,671	3,759	9,275	13,034	14.7	91.2
2022	92,726	9,157	3,828	9,646	13,474	14.5	92.8
2023	96,899	9,670	3,895	10,032	13,927	14.4	94.5
2024	101,259	10,211	3,961	10,433	14,394	14.2	96.3
2025	105,816	10,780	4,024	10,851	14,875	14.1	98.1
2026	110,578	11,381	4,086	0	4,086	3.7	100.0
2027	115,554	12,013	4,145	0	4,145	3.6	100.0
2028	120,754	12,679	4,200	0	4,200	3.5	100.0
2029	126,188	13,250	4,389	0	4,389	3.5	100.0
2030	131,866	13,846	4,587	0	4,587	3.5	100.0
2031	137,800	14,469	4,793	0	4,793	3.5	100.0
2032	144,001	15,120	5,009	0	5,009	3.5	100.0
2033	150,481	15,801	5,235	0	5,235	3.5	100.0
2034	157,253	16,512	5,470	0	5,470	3.5	100.0
2035	164,329	17,255	5,716	0	5,716	3.5	100.0
2036	171,724	18,031	5,973	0	5,973	3.5	100.0

* Calendar basis

** As of beginning of the Fiscal Year

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GAS No. 25 and GAS No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to $0. The required disclosure information is shown in Table VIII.

Table VIII

		January 1, 2001	January 1, 2004
(1)	Actuarial Accrued Liability	$204,557,523	$246,797,910
(2)	Actuarial Value of Assets	134,378,449	145,850,905
(3)	Unfunded Actuarial Accrued Liability	70,179,074	100,947,005
(4)	Funded Ratio (2)/(1)	65.7%	59.1%
(5)	Covered Payroll	$44,779,084	$43,875,838
(6)	UAAL as a percentage of payroll: (3)/(5)	156.7%	230.1%
(7)	Annual Required Contribution (ARC)	$8,558,611	$10,409,170
(8)	Net Pension Obligation	$0	$0

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PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Mellon Human Resources & Investor Solutions as of January 1, 2004.

The normal cost for employees on that date was:	$3,557,008	8.1% of pay
The normal cost for the employer was:	2,216,878	5.1% of pay

The actuarial liability for active members was:	$103,890,868
The actuarial liability for retired members was:	142,907,042
Total actuarial accrued liability:	246,797,910
System assets as of that date:	145,850,905
Unfunded actuarial accrued liability:	$100,947,005

The ratio of system's assets to total actuarial liability was 59.1%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.25%
Rate of Salary Increase:	5.0%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/04	$145,850,905	$246,797,910	$100,947,005	59.1%	$43,875,838	230.1%
01/01/01	134,378,449	204,557,523	70,179,074	65.7%	44,779,084	156.7%
01/01/98	103,343,920	168,736,337	65,392,417	61.2%	38,969,295	167.8%
01/01/95	67,754,043	127,119,756	59,365,713	53.3%	31,711,990	187.2%
01/01/92	58,351,419	115,469,624	57,118,205	50.5%	28,547,090	200.1%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2004

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
20-24	13	1	0	0	0	0	0	0	0	14
	27,724	32,001	0	0	0	0	0	0	0	28,030
25-29	57	5	0	0	0	0	0	0	0	62
	30,467	50,536	0	0	0	0	0	0	0	32,086
30-34	46	20	6	1	0	0	0	0	0	73
	36,606	48,299	43,883	34,460	0	0	0	0	0	40,378
35-39	54	47	15	9	1	0	0	0	0	126
	36,450	43,125	40,000	48,392	17,627	0	0	0	0	40,066
40-44	52	39	22	49	6	0	0	0	0	168
	29,995	39,206	50,682	59,733	61,955	0	0	0	0	44,657
45-49	44	45	28	43	12	6	0	0	0	178
	32,588	33,990	38,385	54,518	62,390	49,282	0	0	0	41,724
50-54	35	34	42	31	22	28	16	0	0	208
	25,968	29,960	35,278	38,792	55,918	76,057	59,635	0	0	42,912
55-59	25	18	12	27	10	20	22	1	0	135
	25,340	30,224	42,196	33,363	49,514	65,243	65,537	63,707	0	43,631
60-64	14	11	11	7	8	4	7	5	0	67
	18,162	26,505	35,832	44,576	38,193	55,165	57,068	67,973	0	37,575
65-69	7	6	4	1	2	0	3	3	2	28
	24,505	25,510	27,608	50,674	40,472	0	38,470	70,174	41,318	34,829
70+	3	1	0	0	2	1	2	0	1	10
	8,592	6,616	0	0	36,267	10,532	38,582	0	67,609	26,023
Total Employees	350	227	140	168	63	59	50	9	3	1,069
Average Salary	30,677	36,784	39,612	48,853	52,736	67,141	59,760	68,233	50,082	41,044

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Retiree Distribution as of January 1, 2004

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	1	1	0	1,816	1,816
45-49	8	1	9	114,425	15,277	129,702
50-54	15	2	17	435,848	10,510	446,358
55-59	38	21	59	1,370,850	242,267	1,613,118
60-64	61	36	97	1,826,629	455,854	2,282,484
65-69	52	39	91	1,217,094	495,028	1,712,123
70-74	73	47	120	1,512,260	548,755	2,061,015
75-79	119	55	174	2,163,072	485,571	2,648,643
80-84	74	44	118	1,020,759	335,257	1,356,016
85-89	44	24	68	429,383	182,063	611,446
90-94	23	11	34	232,440	81,661	314,101
95-99	13	2	15	65,907	11,574	77,481
Total	520	283	803	10,388,668	2,865,634	13,254,302
Average (Age/Payment)	74.1	73.8	74	19,978	10,126	16,506
Frequency Percent	64.8	35.2	100	78.4	21.6	100

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Disabled Retiree Distribution as of January 1, 2004

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	0	1	17,129	0	17,129
40-44	1	0	1	30,416	0	30,416
45-49	7	2	9	209,076	53,201	262,277
50-54	14	1	15	335,688	53,354	389,041
55-59	13	1	14	337,919	9,426	347,345
60-64	23	0	23	600,730	0	600,730
65-69	20	0	20	497,557	0	497,557
70-74	14	0	14	279,133	0	279,133
75-79	18	0	18	424,621	0	424,621
80-84	8	0	8	146,337	0	146,337
85-89	1	0	1	15,526	0	15,526
90-94	0	0	0	0	0	0
95-99	0	0	0	0	0	0
Total	120	4	124	2,894,133	115,980	3,010,113
Average (Age/Payment)	65.2	51.9	64.8	24,118	28,995	24,275
Frequency Percent	96.8	3.2	100	96.1	3.9	100

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EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2004	$16,335	$3,557	$10,409	$11,762	$9,393
2005	16,980	3,765	11,036	12,539	10,360
2006	17,639	3,984	11,399	13,384	11,128
2007	18,346	4,215	11,775	14,292	11,936
2008	19,045	4,460	12,163	15,268	12,846
2009	19,753	4,717	12,565	16,319	13,848
2010	20,493	4,989	12,981	17,452	14,929
2011	21,242	5,275	13,410	18,676	16,119
2012	22,038	5,578	13,855	19,997	17,392
2013	22,908	5,897	14,314	21,420	18,723
2014	23,748	6,233	14,789	22,956	20,230
2015	24,663	6,587	15,280	24,615	21,819
2016	25,667	6,961	15,788	26,402	23,484
2017	26,678	7,355	16,313	28,327	25,317
2018	27,735	7,771	16,855	30,404	27,295
2019	28,758	8,209	12,984	32,467	24,902
2020	29,789	8,671	13,034	34,491	26,407
2021	30,752	9,157	13,474	36,659	28,538
2022	31,665	9,670	13,927	39,006	30,938
2023	32,558	10,211	14,394	41,554	33,601
2024	33,380	10,780	14,875	44,325	36,600
2025	34,148	11,381	4,086	46,892	28,211
2026	34,833	12,013	4,145	49,209	30,534
2027	35,409	12,679	4,200	51,724	33,194
2028	35,860	13,250	4,389	54,459	36,238
2029	36,223	13,846	4,587	57,449	39,659
2030	36,401	14,469	4,793	60,729	43,590
2031	36,435	15,120	5,009	64,340	48,034
2032	36,440	15,801	5,235	68,320	52,916
2033	37,663	16,512	5,470	72,654	56,973

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2004, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees for the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

(i) Group 1: Most general employees in State and local government

(ii) Group 2: Certain specified hazardous duty positions

(iii) Group 3: State police officers and inspectors

(iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. Salary

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

Date of Hire	**Member Contribution Rate**
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of $30,000

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. Creditable Service

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. <u>Service Retirement</u>

a. <u>Eligibility</u>:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

(i) completion of 20 years of service

(ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member

(iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

(iv) if an employee is a State Police officer (Group 3), attainment of age 50

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

Age at	Percentage of Average Salary		
Retirement	Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

For Group 3 (State Police), the benefit is 50% of the participant's final year's rate of regular salary, plus an additional 1% for each year of service in excess of 20 years. In addition, for veterans (all groups) there is an additional benefit of $15 per year for each year of service, up to a maximum of 20 years of service.

8. Deferred Vested Retirement

a. Eligibility:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus $450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of $250 per month to the surviving spouse, plus $120 for the first child, plus $90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of $250 per month plus $120 for the first child and $90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is $12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

(i) Option A – Life annuity

(ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member

(iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. **Member Data**

   The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. **Valuation Date**

   January 1, 2004.

3. **Actuarial Cost Method**

   The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. **Rate of Investment Return**

   It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.25% per annum.

5. **Salary Scale**

   It is assumed that salaries including longevity will increase at a rate of 5% per year.

6. **Cost-of-Living Increases**

   Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and $12,000 per year.

7. **Value of Investments**

   Assets held by the fund are valued at market value as reported by the Public Employees'

Retirement Administration Commission (PERAC). The actuarial value of assets is determined using a five-year smoothing of unrealized gains and losses.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

Service	General Employees	Police and Fire Employees
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both preretirement and postretirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

Age	Male General Employees	Female General Employees	Male and Female Police and Fire Employees
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

Attained Age	General Employees	Police and Fire Employees
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2004 is $300,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the City of Somerville Contributory Retirement System contributing as of January 1, 2004, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost is reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Mellon Human Resources & Investor Solutions

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Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 99-4086

October 2004